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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/791,274	03/03/2004	Ryoji Ninomiya	008312-0308597	8948
909 7590 01/08/2008 PILLSBURY WINTHROP SHAW PITTMAN, LLP P.O. BOX 10500 MCLEAN, VA 22102			EXAMINER WALKER, KEITH D	
			ART UNIT 1795	PAPER NUMBER
			MAIL DATE 01/08/2008	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/791,274	Applicant(s) NINOMIYA ET AL.	
	Examiner Keith Walker	Art Unit 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 30 October 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 4-19 and 21-33 is/are pending in the application.
- 4a) Of the above claim(s) 4-17 and 25-33 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 18, 19 and 21-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/30/07 has been entered.

### ***Response to Amendment***

Claims 4-19 & 21-33 are pending in the application and claims 4-17 & 25-33 are withdrawn from consideration. Claims 18, 19 & 21-24 are pending examination.

### ***Claims Interpretation***

Regarding limitations drawn to the functions that each element of the apparatus performs, an apparatus is considered patentable when it is structurally different not functionally different over the prior art. Examples of such functional language include, "stores information indicating a result sensed by the sensing unit" and "and displays information to prompt an installation of the tank or information that the tank is not installed..." (Claim 18). While features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. An apparatus claim covers what a device is, not what a device does. A claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate

the claimed apparatus from a prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim (MPEP 2114).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 18, 19 & 21-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,057,051 (Uchida).

Uchida describes a personal computer, which has a body having a display unit and a controller. A detachable fuel cell unit powers the computer and comprises a fuel cell, a fuel tank, a sensor for detecting the amount of fuel remaining and a control unit with a first storage unit (Fig. 1; 3:1-40, 7:39-54). The sensor detects the amount of fuel remaining and then the amount of operation time remaining is computed. The calculated remaining operating time information is sent to the electronic apparatus through a connection terminal so the electronic apparatus' equipment can display the information (Figs. 1 & 5; 7:39-54). The method disclosed for computing the amount of remaining operating time uses mathematical computations. The information gathered and the computations made inherently require storing information from the sensors (7:43-46). The status of low fuel on the display unit would prompt one to replace the

fuel in order to keep the apparatus working. A replaceable fuel tank supplies the fuel cell with the appropriate fuel (Figs. 2 & 3; 7:33-37). If no fuel tank is present then the sensor shows a low fuel status on the display, indicating a bad connection or no connection of the fuel tank to the apparatus. The electronic apparatus' equipment, like the personal computer exemplified, inherently has a second storage unit, such as memory and a processing unit (CPU), to operate the functions of the computer and fuel cell system, which include requesting the amount of fuel remaining, operating times and operating conditions from the fuel cell unit (7:39-60). For instance, a graphics card will have memory for processing the information that will be displayed on the monitor.

Concerning claim 24, the limitations are seen as a process of operating and while the limitations have been considered, they are not given patentable weight. The process of operating the apparatus does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations.

Uchida is silent to sensing whether or not a tank is installed.

As discussed above, Uchida teaches a sensor for detecting the amount of fuel remaining. If no fuel tank is present, then the pressure sensor would indicate a 'tank pressure' of zero. This information presented to the user would prompt the user to replace or place a full fuel tank into the fuel chamber. It would be obvious to one skilled in the art to use a proximity sensor to indicate to the user that the low fuel pressure was due to a lack of fuel tank and not just to a fuel tank running low on fuel.

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the fuel cell system of Uchida with a fuel tank

proximity sensor to indicate to the user that a fuel tank is needed and that the low pressure is due to a lack of a fuel tank.

2. Claims 18, 19 & 21-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,057,051 (Uchida) in view of US Publication 2004/0023087 (Redmond).

The teachings of Uchida as discussed above are incorporated herein.

Uchida is silent to using a sensor to determine if a fuel tank is present.

Redmond teaches a fuel cell system with replaceable fuel tanks (Abstract, [0003]). The tanks are placed into an accepting slot with a sensor that determines if a hydrogen tank is installed ([0215]). If a fuel tank is present the user interface displays information concerning the installed fuel tank ([0216, 0217]).

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the fuel cell system of Uchida with the fuel tank sensor of Redmond so the system and the user can determine if a tank is installed.

3. Claims 18, 19 & 21-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,057,051 (Uchida) in view of US Publication 2004/0022168 (Faris).

The teachings of Uchida as discussed above are incorporated herein.

Uchida is silent to using a sensor to determine if a fuel tank is present.

Faris teaches a fuel cell system using a fuel cassette as the fuel tank (Abstract). The fuel cell system includes a cassette proximity sensor to detect when a fuel cassette is inserted into a receiving mechanism (Fig. 1; [0091]). The sensor allows the system to automatically initiate the cassette loading processing once a cassette has been detected.

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the fuel cell system of Uchida with the proximity sensor of Faris in order to allow automation to the fuel tank loading process. Since Uchida teaches displaying information concerning the status of the fuel tank, it would be obvious to one skilled in the art to also display the status of the fuel tank as detected by the proximity sensor, in order to present all available information to the user.

### ***Response to Arguments***

Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Keith Walker whose telephone number is 571-272-3458. The examiner can normally be reached on Mon. - Fri. 8am - 5pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

K. Walker

MARK RUTHKOSKY  
PRIMARY EXAMINER

*Mark Ruthkosky* 1.4.2008